

C & B DRAFT
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ENVIRONMENTAL TOBACCO SMOKE: A CASE OF "POLITICAL SCIENCE"

In recent years, there has been considerable controversy over the claim that exposure to other people's tobacco smoke, known as environmental tobacco smoke (ETS), can affect the health of non-smokers. This claim, based on a number of extremely shaky epidemiologic studies, has been eagerly taken up by anti-smoking groups in their crusade against tobacco. Unfortunately, some government agencies and the media have joined in the fray, and the false impression often conveyed to the general public is that the case against ETS is closed and that regulation of smoking is an appropriate response.

The reality is quite different. Take the issue of lung cancer, which has attracted the most attention. Some 30 epidemiologic studies of ETS and lung cancer have been published in the last decade. Such studies by definition can at best identify a statistical association between exposure to a possible risk factor and the increased -- or decreased -- chance of contracting a disease; they say nothing about the biological mechanisms of disease, or about the actual cause of disease in individual cases. In any event, of the 30 ETS studies conducted so far, the great majority have not produced statistically significant results, and some have even reported a negative association, i.e., a decreased risk for lung cancer due to ETS exposure.

Moreover, scientists reviewing the ETS/lung cancer studies have produced devastating critiques of their design and execution. For example, the studies generally have failed to pay adequate attention to the important role of confounding factors (i.e. factors other than ETS that have been associated with lung cancer, such as diet and other lifestyle factors) that could produce spurious results. In addition, the most recent, largest, and best-designed studies have not provided evidence for an increased risk from ETS exposure.

The reasonable conclusion from the studies conducted thus far is that ETS exposure has not been shown to present an increased statistical risk of lung cancer. And by no means has ETS exposure been shown by laboratory or clinical testing methods to be an actual cause of lung cancer. The same conclusion holds for the other diseases, such as cardiovascular disease and various respiratory ailments, for which claims have been made with regard to ETS exposure.

Notwithstanding the shortcomings of the epidemiologic evidence, some people maintain that there must be a connection between ETS exposure and disease, based on their claim that ETS can be equated with the "mainstream" smoke inhaled by active smokers. But this claim is simply wrong. ETS is a complex mixture consisting of portions of the exhaled mainstream smoke and the "sidestream" smoke that comes from the end of a burning cigarette. This mixture, furthermore, rapidly dilutes into the air in a room and "ages" chemically so that it is in fact

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something quite different from mainstream smoke. At present, a great deal remains to be learned about the composition and behaviour of ETS, but one thing is certain: to equate it with mainstream smoke is scientifically unsound.

Yet the campaign against ETS continues. Why, for example, should certain regulatory agencies pay so much attention to ETS when the relevant data base is so weak? The answer, unfortunately, seems to be that some agencies have allowed their anti-smoking zeal to get in the way of their duty to proceed on the basis of objective scientific criteria.

The U.S. Environmental Protection Agency, which is working on a draft "risk assessment" relating to ETS, probably is the most striking illustration of this problem. Relying on the same questionable data referred to above, EPA's first draft concluded that ETS was a "known human carcinogen" responsible for an estimated 3700 lung cancer deaths in the U.S. -- despite the fact that the data clearly do not suffice for such a conclusion under the agency's own carcinogen classification guidelines and are demonstrably weaker than the data relating to other factors, such as exposure to radiation from electromagnetic fields, where the agency has concluded that such a conclusion as to carcinogenicity is not justified.

There are serious doubts about the objectivity and fairness with which the EPA has approached the ETS issue. What is more, these doubts go far beyond that single issue. Recognizing this problem, the EPA Administration recently commissioned a panel of outside experts to examine thoroughly the role of science at the agency. The resulting report, "Safeguarding the Future: Credible Science, Credible Decisions", just released in March 1992, contains a host of trenchant criticisms of the agency's shortcomings with regard to its use of science in regulatory decision making. Most telling, perhaps, is the report's finding the "EPA science is perceived by many people, both inside and outside the Agency, to be adjusted to fit policy". That is precisely what has been happening with the ETS issue, to the detriment of objective scientific inquiry.

What will become of the ETS issue? It is to be hoped that needed scientific research will continue, undisturbed by interference from political interests. In the meantime, there simply is no credible basis for a conclusion that ETS exposure increases the risk of disease. As for the annoyance that can nevertheless be experienced from such exposure, the simple fact is that a room with too much smoke is but a symptom of general problems with ventilation that indeed allow for the intrusion of a panoply of pollutants in the indoor environment. Doing away with smoking will remove only the one substance that can be seen and smelled, leaving the rest unaffected. The solution is to ventilate and filter the indoor air properly and, in cases where smokers and non-smokers are in the same environment, to employ a measure of common sense and consideration to accommodate the wishes of everyone.

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